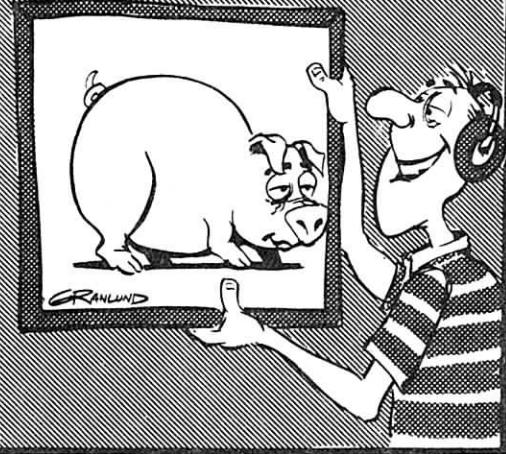


December, 1979

The FRAMINGHAM

FRAMINGHAM AMATEUR
RADIO ASSOCIATION
NEWSLETTER



PRESIDENT - LEW NYMAN - K1AZE 879-7456
V. PRESIDENT - JIM BOATES - WA1UEH 653-6398
SECRETARY - RON EGALKA - K1YHM 877-4520
TREASURER - HOW DAVIS - WA1VFJ 655-4720
ACTIVITIES - MARTY GREEN - WA1WHU 877-1768
ASSOCIATION CALLSIGN - W1FY
MAIL ADDRESS: P.O. BOX 3005, FRAMINGHAM, MA. 01701
THE FRAMINGHAM AMATEUR RADIO ASSOCIATION MEETS
THE FIRST THURSDAY OF THE MONTH AT 7:30 P.M.
AT THE FRAMINGHAM CENTER LIBRARY. ALL AMATEURS
AND PERSONS INTERESTED IN AMATEUR RADIO ARE
INVITED TO ATTEND.....
EDITOR - JIM BOATES - WA1UEH 653-6398
17 BRAEMORE ROAD, NATICK, MA. 01760

THE NEXT MEETING OF THE FRAMINGHAM AMATEUR RADIO ASSOCIATION WILL BE HELD ON THURSDAY JANUARY 3RD, 1980 AT THE FRAMINGHAM CENTER LIBRARY STARTING AT 7:30 P.M. WE WILL DISCUSS THE FOLLOWING IMPORTANT SUBJECTS. 1. JON WIENER K1VVC IS CHECKING OUT THE FEASABILITY OF GETTING CLUB JACKETS TO BETTER IDENTIFY ASSOCIATION MEMBERS AT FIELD-DAY, FLEA MARKET AND OTHER ASSOCIATION ACTIVITIES. 2. TO APPOINT MEMBERS OF THE FLEA MARKET COMMITTEE FOR THE COMING SEASON. 3. TAKE RESERVATIONS FOR OUR ANNUAL DINNER PARTY, AND OTHER IMPORTANT BUSINESS. SEE YOU AT THE MEETING.....

December, 1979

WE RECIEVED A LETTER OF THANKS FROM CLAY ORSER, FRAMINGHAM CIVIL PREPAREDNESS OFFICE, FOR F.A.A.R.E.N.'S PARTICIPATION IN THE HALLOWEEN WATCH THAT HELPED KEEP FRAMINGHAM PUBLIC BUILDINGS PROTECTED FROM MALICIOUS DAMAGE.

THE ANNUAL ASSOCIATION DINNER DATE IS JANUARY 10TH, THURSDAY EVENING, COCKTAILS FROM 7 P.M. DINNER AT 8 P.M. THE PRICE FOR THE DINNER IS ONLY \$5.00 PER PERSON. THE ACTUAL COST FOR THE DINNER IS \$7.95 BUT THE ASSOCIATION WILL PAY THE ADDITIONAL \$2.95. THE DINNER PARTY WILL BE AT "MARCONI'S" FAMOUS ITALIAN RESTAURANT. THE MENU WILL CONSIST OF AN ANTI-PASTO, VEAL CACCIORE, CHICKEN, POTATOS, VEGATABLES, SHELL MACARONI, SPUMONI AND COFFEE. I PROBABLY HAVE MISSED SOME OF THE GOODIES, BUT, THOSE OF YOU WHO HAVE ATTENDED THE DINNERS, SERVED FAMILY STYLE, IN THE PAST KNOW THE WONDERFUL SPREAD "MARCONI'S" PUT OUT. BRING THE XYL, YL, HARMONICS OR FRIENDS, YOU CAN'T BEAT THE PRICE. PLEASE MAKE YOUR RESERVATIONS WITH LEW K1AZE AT 879-7456 OR JIM WA1UEH AT 653-6398. RESERVATIONS CAN BE MADE NO LATER THAN THE JAN 3RD MEETING. WE HAVE TO KNOW HOW MANY DINNERS TO ORDER, SO, DON'T BE LEFT OUT....

THE FALL FLEA MARKET WAS AN OUTSTANDING SUCCESS WITH 830 PAID ATTENDANCE, 71 TABLES LOADED WITH ELECTRONIC GOODIES, AND A NET PROFIT TO THE ASSOCIATION OF \$1123.49. THE SPRING FLEA MARKET WILL BE HELD AT THE DRILL SHED ON APRIL 27TH, 1980, WITH, WE HOPE THE SAME SUCCESSFUL RESULTS.....

THE MEMBERS OF THE FRAMINGHAM AMATEUR RADIO ASSOCIATION EXTEND THEIR DEEPEST SYMPATHY TO JULIE HOFFER W1DL WHOSE MOTHER PASSED AWAY RECENTLY IN JULIES HOMETOWN OF DETROIT.

FROM THIS WORLD AND CHOAS
TO A LAND OF ETERNAL DAY,
GOD CALLED THIS FAITHFUL FOLLOWER
AND GUIDED HER ON HER WAY.

WHEN NANCY XYL OF ENZO ROTATORI WA1PYF, ONE OF OUR PAST PRESIDENTS WENT TO WORK ON NOV. 28TH, A LARGE MAPLE TREE STOOD IN FRONT OF THEIR WINTER ST. HOME. WHEN SHE RETURNED LATER IN THE DAY, ONLY A STUMP REMAINED. WHILE SHE CONCEDE THAT SHE DOES NOT EXPECT TO GAIN A NEW TREE BY BATTING THE TOWN'S TREE DEPT. NANCY IS CONDUCTING AN INQUIRY TO INSURE THE LOSS OF THE NEARLY 100 YEAR OLD TREE WILL NOT GO UNAVENGED. SHE BELIEVES THE TREE WAS ON HER LAND AND HEALTHY. SHE IS SEEKING VERIFICATION OF HER BELIEF THAT TOWN POLICY REQUIRES A PUBLIC HEARING BEFORE REMOVING TREES ON THOROUGHFARES LIKE WINTER STREET, WHICH IS CLASSIFIED A "SCENIC WAY." TOWN TREE WARDEN ROBERT RALSTON TOLD HER DURING DELIBERATIONS OVER THE PLACEMENT OF A SIDE-WALK THAT THE TREE WOULD SURVIVE "ANOTHER 15 OR 20 YEARS" NANCY CLAIMS. EVEN IF THE TREE NEEDED TO BE CUT, SHE SAID, SHE WAS AT LEAST ENTITLED TO THE LOGS WHICH RESULTED FROM THE TREE'S DEMISE. GO GET 'EM NANCY, NOW THAT WOOD IS GOING FOR \$125.00 A CORD, LET'S NOT HAVE ANY HANKY-PANKY FROM THE TREE DEPARTMENT.....

***** GOOD NEWS *****

ALL PRESENT HF BANDS, THREE NEW HF BANDS, AND A NEW UHF BAND WERE ALLOCATED TO THE AMATEUR SERVICE AS WARC 79 FINISHED ITS WORK. DESPITE SOME GLOOMY PREDICTIONS OF A MAJOR FREQUENCY LOSS BY THE AMATEUR SERVICE, IT'S NOW BEEN CONFIRMED THAT AMATEURS, AT LEAST IN THE U.S. DID NOT LOSE ONE KHZ IN THE HF SPECTRUM BUT INSTEAD PICKED UP ALL THREE OF THE DESIRED NEW BANDS! IN THE VHF SPECTRUM PRELIMINARY PRESS TIME REPORTS BELIEVED COMPLETE AND ACCURATE, SHOW EQUALLY GOOD NEWS FOR HIGHER FREQUENCY ENTHUSIASTS. BAND BY BAND, HERE'S THE RUNDOWN FROM WARC 79 ON THE NEW AMATEUR SPECTRUM THROUGH 1000 MHZ.

160 METERS: IN REGION 1, 1800-1850 SHARED WITH LORAN UNTIL LORAN SHUTS DOWN AT THE END OF 1982, 1850-2000 SHARED WITH FIXED, MOBILE, RADIO LOCATION, AND RADIO NAVIGATION [1850-2000] NOT AVAILABLE FOR AMATEURS IN MEXICO AND MUCH OF SOUTH AMERICA. 1800-1850 WILL BE AVAILABLE TO AMATEURS IN REGION 1 FOR THE FIRST TIME, ON A SHARED BASIS WITH LORAN UNTIL ITS SHUT DOWN.....

80/75 METERS: IN REGION 2, 3500-3750 AMATEUR EXCLUSIVE WITH THE EXCEPTION OF MEXICAN AND SOME SOUTH AMERICAN FIXED AND MOBILE USERS, 3750-4000 SHARED WITH FIXED AND MOBILE, EXCEPT FOR MUCH OF SOUTHERN SOUTH AMERICA, WHICH EXCLUDES AMATEURS 3750-4000, AND CANADA AND GREENLAND, WHICH RESERVES 3950-4000 FOR A FUTURE ARCTIC REGION BROADCAST SERVICE ON A NON-INTERFERENCE BASIS.

40 METERS: 7000-7100 AMATEUR EXCLUSIVE WORLDWIDE, 7100-7300 AMATEUR IN REGION 2 ONLY WITH THE STIPULATION THAT REGION 2 AMATEUR OPERATION MUST NOT INTERFERE WITH BROADCAST IN REGION 1 OR 3.

30 METERS: 10.10-10.15 MHZ WITH FIXED SERVICE PRIMARY AND AMATEUR SERVICE SECONDARY, WORLDWIDE.

20 METERS: 14.00-14.35 UNCHANGED, WITH SEVERAL OTHERS JOINING RUSSIA IN FOOTNOTES RESERVING 14.25-14.35 FOR FIXED SERVICES.

17 METERS: 18.068-18.168 AMATEUR AND AMATEUR SATELLITE ARE EXCLUSIVE [WITH A RUSSIAN RESERVATION FOR INTERNAL FIXED SERVICE USE], BUT WITH THE STIPULATION THAT AMATEURS WON'T BE PERMITTED TO MOVE IN UNTIL AFTER ALL PRESENT USERS HAVE MOVED!

15 METERS: NO CHANGE, WORLDWIDE..

12 METERS: 24.890-24.990 AMATEUR AND AMATEUR SATELLITE ARE EXCLUSIVE, WITH THE SAME RESTRICTION AS 17 METERS...

10 METERS: UNCHANGED, WORLDWIDE...

6 METERS: UNCHANGED, AFTER EARLIER HOPE OF SOME LIMITED BAND BEING MADE AVAILABLE IN REGION 1 DIDN'T MATERIALIZE....

2 METERS: UNCHANGED [144-148 IN REGION 2, 144-146 ELSEWHERE].

1 1/4 METERS: AMATEURS IN REGION 2 ONLY, CO-SHARED WITH MOBILE AND FIXED ON AN EQUAL BASIS....

70 CENTIMETERS: 430-440 MHZ HAS RADIO LOCATION PRIMARY, AMATEUR RADIO SECONDARY IN ALL REGION, WITH 435-438 AMATEUR SATELLITE, 420-430 AND 440-450 SHOWS FIXED AND MOBILE PRIMARY IN ALL REGIONS...BUT A FOOTNOTE BY THE U.S. AND SEVERAL OTHERS ALLOCATES THESE ADDITIONAL FREQUENCIES TO THE AMATEUR SERVICE ON A SECONDARY BASIS. SIMILARLY, 440-450 IS ALLOCATED TO AMATEURS ON A SECONDARY BASIS IN A FOOTNOTE BY CANADA AND SEVERAL OTHERS.

35 CENTIMETERS: A NEW UHF 902-928 MHZ BAND, WAS ALLOCATED TO FIXED, MOBILE, ISM AND OTHERS ON A SHARED BASIS, WITH AMATEUR SERVICE SECONDARY. WHAT THIS MEANS TO THE AMATEUR SERVICE IN THE U.S. IS HARD TO PREDICT, WITH INTEREST HIGH AT THE FCC IN A NEW PERSONAL RADIO SERVICE IN THIS BAND.

DETAILS ON AMATEUR MICROWAVE ALLOCATIONS WERE NOT AVAILABLE AT PRESS TIME. THOUGH IT'S ALMOST CERTAIN THAT 1215-1300 SAW SOME REDUCTION. WE SHOULD HAVE A DETAILED RUNDOWN ON THE HIGHER FREQUENCIES SOON, ALONG WITH FURTHER DETAILS ON OTHER AMATEUR RADIO NEWS FROM WARC... TNX HRR, CARF AND OTHERS...

December 1979

VOLUNTEER AMATEUR EXAMS ARE ILLEGAL!, THE FCC'S GENERAL COUNCIL DECLARED AT THE COMMISSION'S AGENDA MEETING DEC. 19TH. THE BOMBSHELL ANNOUNCEMENT CAME AS THE COMMISSIONERS DISCUSSED TERMINATING DOCKET 20679, THE NOTICE OF PROPOSED RULE MAKING THAT WOULD HAVE REQUIRED VOLUNTEER EXAMINERS TO SUBMIT PHOTOCOPIES OF THEIR LICENSES WHEN REQUESTING AN EXAM. THE JUDGEMENT APPEARS TO STEM FROM RECENT CONGRESSIONAL CONCERN THAT SOME GOVERNMENT AGENCIES WERE IMPROPERLY EXPANDING THEIR STAFFS WITHOUT APPROVAL OF CONGRESS, BY USE OF VOLUNTEERS AND CONTRACTORS. WHEN THE LEGAL STAFF REVIEWED THE VOLUNTEER PROGRAM IN CONNECTION WITH DOCKET 20679, THEY CONCLUDED IT IS ILLEGAL AND THUS MUST BE TERMINATED. WHAT EFFECT TERMINATION WILL HAVE ON EXISTING TRAINING PROGRAMS AND U.S. AMATEUR GROWTH, NOT TO MENTION THE ADDED BURDEN ON FCC'S FIELD OFFICES, REMAINS TO BE SEEN. FOR THE FIRST THREE YEARS OF THE NOVICE PROGRAM ITS EXAMS WERE ALL FIELD OFFICE ADMINISTRATED; RESPONSIBILITY FOR NOVICE EXAMS HAS RESTED WITH THE AMATEUR SERVICE SINCE JUNE, 1954. NO DATE HAS YET BEEN SET FOR TERMINATION...HRR...

NEW SSB-ONLY CB CHANNELS JUST ABOVE THE PRESENT CB BAND CAME A LONG STEP CLOSER TO REALITY AT THE COMMISSIONS DEC. 19TH MEETING. THE IMMEDIATE RESULT WILL BE AN NPRM PROPOSING A 12 WATT PEP SSB-ONLY EXTENSION OF THE PRESENT CB SERVICE, BUT ASKING FOR COMMENTS ON WHETHER VXO'S SHOULD BE PERMITTED, SHOULD THE PRESENT 150 MILE LIMIT BE ELIMINATED, WHETHER THE EXPANSION WOULD CAUSE MORE TVI, AND WHETHER OPERATION ON THE NEW FREQUENCIES SHOULD REQUIRE A SPECIAL EXAM?

THE PRIVATE RADIO BUREAU'S STAFF PROPOSAL WAS FOR EXPANSION INTO NEW 12 WATT MAXIMUM SSB ONLY CHANNELS, VXO USE PERMITTED, NO DISTANCE RESTRICTIONS, BUT REQUIRING A SPECIAL LICENSE WITH AN EXAM ADMINISTERED BY AN OUTSIDE CONTRACTOR. HOWEVER, ONE FCC STAFF MEMBER RECENTLY RETURNED FROM GENEVA COMMENTED THAT THE WARC HAD TURNED DOWN PROPOSALS FOR A NO-CODE HF AMATEUR LICENSE, BUT THAT WHAT THE BUREAU HAD PROPOSED "LOOKS, FEELS AND SMELLS LIKE AMATEUR RADIO-- AND THE REST OF THE WORLD WILL KNOW THAT'S WHAT IT IS, NO MATTER WHAT YOU CALL IT!" LATER IN THE DISCUSSION CHAIRMAN FERRIS NOTED THE PRINCIPAL DIFFERENCE BETWEEN AMATEURS AND CBERS IS IN WHAT THEY TALK ABOUT!!! HRR.

U.S.-CANADIAN RECIPROCAL "NO PRIOR PERMISSION REQUIRED" AMATEUR OPERATION COULD BEGIN AS SOON AS THE LAST HALF OF JANUARY . HRR...

THE FRAMINGham IS STARTING A NEW TECHNICAL SERVICE TO OUR MEMBERS. SIMPLE, EASY TO BUILD EQUIPMENT NEEDED TO ROUND OUT ANY HAM SHACK. JIM ROBBINS N1JR HAS SUBMITTED THE FIRST IN WHAT WE HOPE WILL BE A LONG LINE OF EASY TO BUILD GEAR.....

COULD YOU USE A VARIABLE VOLTAGE [5-15] HIGH CURRENT [5 AMPS +] DC POWER SUPPLY WHICH USES A MERE EIGHT PARTS, BUT BOASTS BETTER THAN 1% LINE AND LOAD REGULATION? HOW ABOUT A 13.8 V BASE SUPPLY WHICH CAN HANDLE VIRTUALLY ANY 2 METER GEAR AVAILABLE? IF SO, READ ON FOR A "NUTS AND BOLTS" TREATMENT OF SUCH A SUPPLY. NOTE: NO PC BOARDS NEEDED.

THE SUPPLY USES A FAIRCHILD "HYBRID" VOLTAGE REGULATOR WHICH MATES A LOW CURRENT REGULATOR WITH A DARLINGTON [DUAL] PASS TRANSISTOR FOR INCREASED POWER DISSIPATION. FOR MORE TECHNICAL DETAILS, SEE MY ARTICLE IN JANUARY, 1979 HAM RADIO. THE REGULATOR WILL PUT OUT BETWEEN 5 AND 24 VOLTS DEPENDING ON TRANSFORMER, ETC. THE CIRCUIT IS SHORT CIRCUIT PROOF AND THERMALLY PROTECTED.

WHILE THE FOLLOWING IS SPECIFICALLY FOR A 13.8 VOLT SUPPLY, CHANGES ARE QUITE SIMPLE. THE SUPPLY SCHEMATIC INVOLVES VERY LITTLE...

**** CONSTRUCTION ****

PARTS ARE ALWAYS A PROBLEM. OBVIOUSLY ANY USEABLE PARTS IN YOUR JUNK BOX WILL REDUCE THE COST OF THE SUPPLY. I HAVE INCLUDED A RECOMMENDED PARTS LIST MADE UP FROM RADIO SHACK PARTS FOR THOSE WHO NEED IT.

THE FAIRCHILD REGULATOR IS AVAILABLE FOR ABOUT \$5.00 FROM GERBER ELECTRONICS, DEDHAM, OR FROM HAMILTON/AVNET, WOBURN. THEY WILL ACCEPT MAIL ORDERS. A GROUP ORDER WILL EASE BOTH THE COST AND EFFORT. LET ME KNOW IF YOU ARE INTERESTED IN ORDERING A NUMBER OF PIECES....

**** PARTS LIST ****

TRANSFORMER: RADIO SHACK -273-1514. ALTHOUGH LISTED FOR 4 AMPS, IT WILL SUPPLY 5 AMPS WITHOUT A PROBLEM. ANY TRANSFORMER WITH 18 VOLTS TO 24 VOLTS WILL DO AT THE REQUIRED CURRENT. CLOSER TO 18 VOLTS IS BETTER.....

RECTIFIER: RADIO SHACK -276-1180 OR 276-1185. PREFER 1185 AT 25 AMPS BECAUSE FOR THE 70 CENT DIFFERENCE, YOU HAVE A GOOD MARGIN OF SAFETY. MOUNTS WITH A MICA WASHER [276-1371] AND HEAT SINK COMPOUND [276-1372].

FILTER CAPACITOR [C1]: 272-1022 [4700 uF. 35V] PREFER USING TWO OF THESE IN PARALLEL FOR 9400 uF. LOWER DISSIPATION IN REGULATOR. MOUNT ON TERMINAL STRIPS..

TRANSIENT CAPS C2 AND C3: 272-1406 FOR C2 [1uF TANTALUM] AND 272-1401 [0.1uF TANTALUM] FOR C3. NOT CRITICAL.

RESISTORS R1 + R2: FOR 13.8V MAKE R2=5K [1/4 OR 1/2 WATT] AND R1= 8.8K [1/4 OR 1/2W] [OR USE ADJUSTABLE 10K POTENTIOMETER.] FOR DIFFERENT VOLTAGES- IF R2=5K, THEN VOLTAGE OUT = R1 =R2 IN K-OHMS.

CASE: 270-269 OR 270-261. REALLY, ANYTHING THAT WILL HOLD THE PARTS.

HEATSINK FOR REGULATOR - 276-1361.

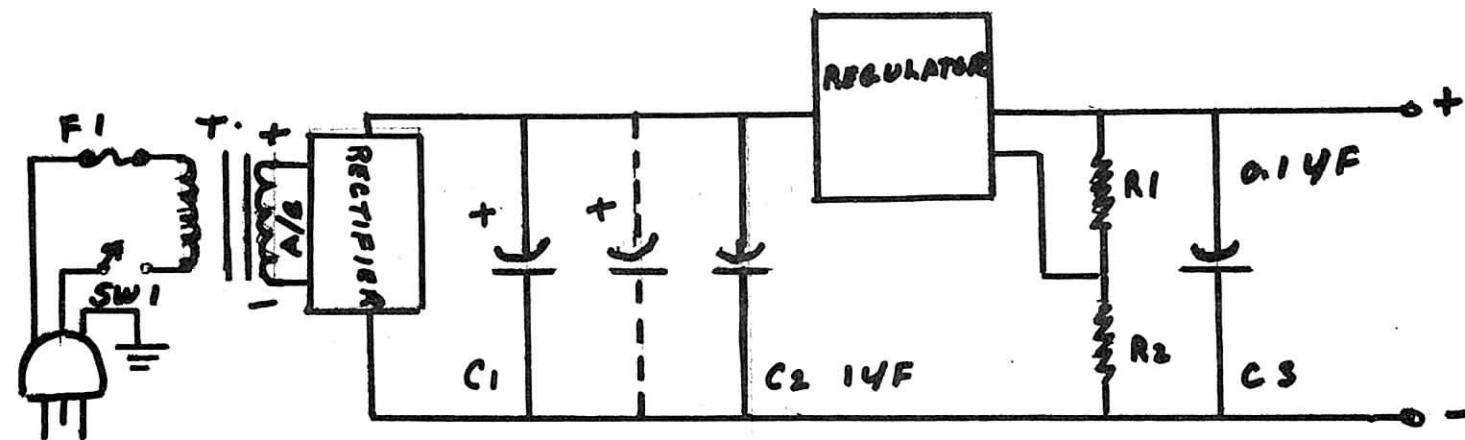
***** BASIC ASSEMBLY *****

1. DRILL HOLES FOR SWITCH, POWER CORD [USE GROMMET], PANEL LIGHT AND POTENTIOMETER IF USED FOR R1. ALSO DRILL HOLES TO PASS LEADS [#16 OR #18] THROUGH BACK PANEL TO REGULATOR PINS, AND DRILL HOLES FOR OUTPUT TERMINALS [274-662, ETC].
2. HEATSINK MOUNTS ON BACK OF CASE. REGULATOR MOUNTS WITH MICA WASHER AND COMPOUND TO HEATSINK. ATTACH WIRES TO REGULATOR AND PASS THROUGH BACK PANEL TO TRANSFORMER, ETC. IDEALLY R1, R2, C2 AND C3 SHOULD ALL BE SOLDERED DIRECTLY TO REGULATOR PINS. LONGER LEADS ARE OKAY BACK TO FILTER CAPACITOR.
3. MOUNT POWER TRANSFORMER INSIDE CASE. MOUNT 2 TERMINAL STRIPS [E.G. 274-688 OR 692] TO USE FOR CONNECTIONS AMONG TRANSFORMER, FILTER CAPACITORS AND RECTIFIER. MOUNT RECTIFIER [WITH MICA WASHER AND COUMPOUND] TO BOTTOM OF CHASSIS NEAR FILTER CAPACITORS.

USE A FUSE IN PRIMARY OF T1 [2-3 AMPS]. USE THREE WIRE GROUNDED PLUG AND CORD AND GROUND CHASSIS TO GREEN LEAD. IT IS OPTIONAL WHETHER TO USE CHASSIS AS DC GROUND FOR SUPPLY [I.E. NEGATIVE TERMINAL OF SUPPLY.] IF YOU WISH TO USE A PANEL METER FOR VOLTAGE AND OR CURRENT MEASUREMENT, PLEASE LET ME KNOW AND I WILL DESCRIBE THE DESIGN.

I HAVE FOUND THE SUPPLY SIMPLE TO BUILD AND EASY TO USE;

JAMES S. ROBBINS, N1JR. TECHNICAL EDITOR.....



FRAMINGHAM A.R.A. DC POWER SUPPLY
N1JR

IF YOU WOULD LIKE TO ADD A SIMPLE CURRENT LIMITING DEVICE, SO THAT YOUR POWER SUPPLY CAN BE USED TO CHARGE NICADS, PLEASE DROP A LINE TO JIM ROBBINS, N1JR, 161 WASHINGTON ST. SHERBORN, MA. 01770, OR CALL 653-6398. THIS CAN BE ADDED AS AN ACCESSORY AFTER YOU HAVE BUILT THE SUPPLY. IF ENOUGH INTEREST IS SHOWN WE WILL PUBLISH THE HOOKUP.....

***** SWAP AND SHOP *****

FOR SALE- A THREE MONTH OLD "STANDARD C-118 WALKIE-TALKIE, LIKE NEW 6 CHANNEL, 5 FILLED. 1 EXTRA CRYSTAL CERTIFICATE PLUS CHARGER AND RUBBER DUCKY ANTENNA. CRYSTALS FOR 52/94/82/64/70. OFFSET IS INTERNAL. SMALL AS A "WILSON". FOR MORE INFO CONTACT JIM N1JR AT 653-3844.....

FOR SALE- A "STANDARD" HT 146A WALKIE-TALKIE WITH CRYSTALS FOR 94 DIRECT, 34/94, 19/79, 15/75 AND 52 DIRECT. INCLUDES RUBBER DUCKY AND TELESCOPIC ANTENNAS, CHARGER BASE, TOUCHTONE PAD AND REAL LEATHER CARRYING CASE. IN EXCELLENT CONDITION. THE ASKING PRICE IS ONLY \$175.00 FOR MORE INFO CONTACT JIM WA1UEH AT 653-6398.....

FOR SALE- A LAFAYETTE LA 23 AMPLIFIER, NEEDS SOME WORK, CASE IS HOT. REPAIR OR DON'T TOUCH AFTER INSTALLING. INSTRUCTION BOOK, ETC. MAKE AN OFFER TO AL K1WVW AT 435-4656.....

FOR SALE- A DC CAR STEREO 4 OR 8 TRACK, COST NEW \$139.00 IN PERFECT CONDITION WITH DIRECTIONS. SPEAKERS NOT INCLUDED AT THE GIVEAWAY PRICE OF \$30.00 OR MAKE AN OFFER. ALSO AVAILABLE AN A/C POWER SUPPLY FOR ONLY \$20.00 FOR INFO CONTACT AL K1WVW AT 435-4656.....

FOR SALE- A "COLLINS" 51 J4 COMMERCIAL COMMUNICATIONS RECIEVER, CONTINUOUS COVERABLE FROM 1.55 TO 30 MHZ, HAS A 6-3-1- MECHANICAL KILOHERTZ FILTERS. A REALLY GREAT RECIEVER FOR RTTY OR SWLing. THESE RECIEVERS ARE NOTED FOR THEIR OUTSTANDING AUDIO QUALITY AND RELIABILITY. ASKING PRICE IS ONLY \$325.00 FOR MORE INFO CONTACT GEORGE W1IWA AT 877-1824.....

FOR SALE- A "COLLINS" STATION CONTROL CONSOLE, MODEL 312 B4, RECENT ROUND EMBLEM. CONTAINS A PHONE PATCH, SPEAKER AND SWR BRIDGE..FOR MORE INFO CONTACT JULIE W1DL AT 872-5084.....

FOR SALE- A POLYCOM 6 METER TRANSCIEVER WITH BUILT IN POWER SUPPLY, MANUALS, SCHEMATIC. THE RIG COMES WITH A THREE RING 6 METER HALO ANTENNA. PLUF IN THE RIG, PLUF IN A MIKE AND YOU ARE ON THE HOT 6 METER BAND. THIS RIG COST \$350.00, WHEN NEW, PRICED NOW AT \$95.00, OR MAKE AN OFFER. FOR INFO CONTACT AL K1WVW AT 435-4656.....

FOR SALE- A "COLLINS" 75A3A AMATEUR BAND RECIEVER IN PERFECT CONDITION. A REALLY GREAT RECIEVER FOR ONLY \$200.00 FOR INFO CONTACT HOWARD WA1VFJ AT 655-4720.....

FOR SALE- A "CLEGG" 22'ER MARK II FM-AM TRANSCIEVER, BUILT IN POWER SUPPLY WITH MANUAL, SCHEMATIC AND MIKE, READY TO GO. \$75.00 OR MAKE AN OFFER TO AL K1WVW AT 435-4656.....

FOR SALE- A "HEWLETT-PACKARD" MODEL 400D A/C VTVM WITH MANUAL. FULL SCALE .001 TO 300 VOLTS A/C IN TEN RANGES, HAS A DB SCALE. FOR INFO CONTACT JULIE W1DL AT 872-5084.....

FOR SALE- A 1 KW "JOHNSON" MATCHBOX, MUST BE SEEN TO BE APPRECIATED, IN EXTRA CLEAN CONDITION. ASKING PRICE IS ONLY \$140.00 FOR INFO CONTACT JULIE W1DL AT 872-5084.....

FOR SALE- A BRAND NEW "MILLEN" POWER SUPPLY, 550-750 DC VOLTS, 250 MA. CONTINUOUS. HAS A 6.3 VOLT 5 AMP. FILAMENT XFORMER. THESE POWER SUPPLYS HAVE A TWO SECTION CHOKE FILTER, RACK MOUNT. IN ORIGINAL WOODEN CRATE. FOR INFO CONTACT JULIE W1DL AT 872-5084.....

CONFUSION SAY: A WISE ENEMY IS LESS HARMFUL THAN A FOOLISH FRIEND